

AMENDMENT

(Amendment based on the provision of Law Section 11)

Examiner, Patent Office

1. No. of International Application PCT/JP03/03775

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4. Object of Amendments DESCRIPTION and CLAIMS

5. Contents of Amendments As in ANNEXED DOCUMENTS

(1) Delete Page 4 Line 17 through Page 6 Line 16 of
DESCRIPTION.

(2) Amend "The invention stated in Claim 6 is characterized in that it has a refrigerating cycle sequentially connecting a compressor, a condenser, a drawing mechanism, an evaporator, and an accumulator, an inlet temperature sensor and an outlet temperature sensor for detecting the temperatures of the inlet and outlet of the evaporator, and a cooling fan for cooling the compressor, and when a difference between the temperature detected by the inlet temperature sensor and the temperature detected by the outlet temperature sensor becomes a predetermined value or more, the cooling fan is stopped." in Page 6 Line 17 through Page 6 Line 22 of DESCRIPTION into "The invention stated in Claim 6 is characterized in that it has a refrigerating cycle sequentially connecting a compressor, a condenser, a drawing mechanism, an evaporator, and an accumulator, an inlet temperature sensor and an outlet temperature sensor for detecting temperatures of an inlet and an outlet of the evaporator and a cooling fan for cooling the compressor, and that the cooling fan is controlled by following steps: a step for judging whether or not the compressor is driven; a step for judging whether or not an air temperature is low when it is judged by the previous step that the compressor is driven; a step for judging whether or not a temperature difference

between a temperature detected by the inlet temperature sensor and a temperature detected by the outlet temperature sensor is equal to a first predetermined value or more when it is judged by the previous step that the air temperature is not low; a step for forcibly stopping the cooling fan when it is judged by the previous step that the temperature difference between the temperatures detected by the temperature sensors is equal to the first predetermined value or more; a step for judging after the previous step whether or not the temperature difference between the temperatures detected by the temperature sensors is equal to a second predetermined value or less which is lower than the first predetermined value; and a step for canceling a forcible state of the cooling fan when it is judged by the previous step that the temperature difference between the temperatures detected by the temperature sensors is equal to the second predetermined value or less."

(3) Delete Page 6 Line 26 through Page 7 Line 23 of DESCRIPTION.

(4) Delete Claim 1 through Claim 5 in Page 22 of CLAIMS.

(5) Amend "A refrigerator having a refrigerating cycle sequentially connecting a compressor, a

condenser, a drawing mechanism, an evaporator, and an accumulator, an inlet temperature sensor and an outlet temperature sensor for detecting temperatures of an inlet and an outlet of said evaporator, and a cooling fan for cooling said compressor, wherein when a difference between said temperature detected by said inlet temperature sensor and said temperature detected by said outlet temperature sensor becomes a predetermined value or more, said cooling fan is stopped." of Claim 6 in Page 23 of CLAIMS into "A refrigerator having a refrigerating cycle sequentially connecting a compressor, a condenser, a drawing mechanism, an evaporator, and an accumulator, an inlet temperature sensor and an outlet temperature sensor for detecting temperatures of an inlet and an outlet of said evaporator and a cooling fan for cooling said compressor,

characterized in that said cooling fan is controlled by following steps:

a step for judging whether or not said compressor is driven;

a step for judging whether or not an air temperature is low when it is judged by the previous step that said compressor is driven;

a step for judging whether or not a temperature difference between a temperature detected by said

inlet temperature sensor and a temperature detected by said outlet temperature sensor is equal to a first predetermined value or more when it is judged by the previous step that said air temperature is not low;

a step for forcibly stopping said cooling fan when it is judged by the previous step that said temperature difference between said temperatures detected by said temperature sensors is equal to said first predetermined value or more;

a step for judging after the previous step whether or not said temperature difference between said temperatures detected by said temperature sensors is equal to a second predetermined value or less which is lower than said first predetermined value; and

a step for canceling a forcible state of said cooling fan when it is judged by the previous step that said temperature difference between said temperatures detected by said temperature sensors is equal to said second predetermined value or less."

(6) Delete Claim 7 through Claim 9 in Page 23 of CLAIMS.

6. List of ANNEXED DOCUMENTS

- (1) Page 4 and Page 5 of DESCRIPTION.
- (2) Page 6 of DESCRIPTION.
- (3) Page 7 of DESCRIPTION.

(4) Page 22 and Page 23 of CLAIMS

OUR COMMENT

1. Regarding Section 5. Contents of Amendments, the numbers of pages and lines as described above are those of the original Japanese Text.

We will describe the correspondence between the Japanese Text and the translated English Text below.

(1) Delete Page 4 Line 17 through Page 6 Line 16 of DESCRIPTION. (Japanese)

Delete Page 8 Line 20 through Page 12 Line 26 of DESCRIPTION. (English)

(2) Amend " " in Page 6 Line 17 through Page 6 Line 22 of DESCRIPTION (Japanese)

Amend " " in Page 13 Line 1 through Page 13 Line 12 of DESCRIPTION (English)

(3) Delete Page 6 Line 26 through Page 7 Line 23 of DESCRIPTION. (Japanese)

Delete Page 13 Line 19 through Page 15 Line 19 of DESCRIPTION. (English)

(4) Delete Claim 1 through Claim 5 in Page 22 of CLAIMS. (Japanese)

Delete Claim 1 through Claim 5 in Page 46 through Page 48 of CLAIMS. (English)

(5) Amend " " of Claim 6 in Page 23 of CLAIMS (Japanese)

Amend " " of Claim 6 in Page 48 of CLAIMS

(English)

(6) Delete Claim 7 through Claim 9 in Page 23 of CLAIMS. (Japanese)

Delete Claim 7 through Claim 9 in Page 48 through Page 49 of CLAIMS. (English)

2. Regarding Section 6. List of ANNEXED DOCUMENTS, the numbers of pages as described above are those of the original Japanese Text.

We will describe the correspondence between the Japanese Text and the translated English Text below.

- (1) Page 4 and Page 5 of DESCRIPTION. (Japanese)
Page 8 through Page 12 of DESCRIPTION. (English)
- (2) Page 6 of DESCRIPTION. (Japanese)
Page 13 and Page 14 of DESCRIPTION. (English)
- (3) Page 7 of DESCRIPTION. (Japanese)
Page 14 and Page 15 of DESCRIPTION. (English)
- (4) Page 22 and Page 23 of CLAIMS (Japanese)
Page 46 through Page 49 of CLAIMS (English)

3. Accordingly, as ANNEXED DOCUMENTS, we will attach Page 8 through Page 15 of DESCRIPTION and Page 46 through Page 49 of CLAIMS.

ratio of the circulating amount of the refrigerant is enlarged, so that the cooling performance is extremely lowered.

The present invention was developed with the foregoing problems in view, and is intended to provide a refrigerator which has initial high cooling performance after turning on power even if a hydrocarbon cooling medium a small amount of which is charged and which is easily soluble in a refrigeration machine oil is used.

Also, the present invention was developed with the foregoing problems in view, and is intended to provide a refrigerator for preventing the defective cooling due to the sleeping of a refrigerant staying in a compressor and a condenser.

Disclosure of Invention

The invention stated in Claim 6 is characterized in that it has a refrigerating cycle sequentially connecting a compressor, a condenser, a drawing mechanism, an evaporator, and an accumulator, an inlet temperature sensor and an outlet temperature sensor for detecting temperatures of an inlet and an outlet of the evaporator and a cooling fan for cooling the compressor, and that the cooling fan is controlled by following steps: a step for judging whether or not the compressor is driven; a step for judging whether or not an air temperature is low when it is judged by the previous step that the compressor is driven; a step for judging whether or not a temperature difference between a temperature detected by the inlet temperature sensor and a temperature detected by the outlet temperature sensor is equal to a first predetermined value or more when it is judged by the previous step that the air temperature is not low; a step for forcibly stopping the cooling fan when it is judged by the previous step that the temperature difference between the temperatures detected by the temperature sensors is equal to the first predetermined value or more; a step for judging after the previous step whether or not the temperature difference between the temperatures detected by the temperature sensors is equal to a second predetermined

value or less which is lower than the first predetermined value; and a step for canceling a forcible state of the cooling fan when it is judged by the previous step that the temperature difference between the temperatures detected by the temperature sensors is equal to the second predetermined value or less.

According to the present invention, the cooling fan can be controlled not to operate when the refrigerant is in a sleeping state, so that the compressor and the condenser are not overcooled and the defective cooling due to the sleeping of the refrigerant can be prevented.

Brief Description of Drawings

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, the embodiments of this invention will be described below.